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## (54) Signal discrimination system.

(57) The invention provides a system for discriminating between modulated backscattered signals based upon transmission-to-reception time delay. The system employs a carrier, phase-modulated with a modulating signal, having characteristics which provide unity output when correlated with itself with zero time shift and a substantially lower output level when correlated with itself with a significant time shift. The system works with a backscatter-modulator located a finite distance from the transmitter for receiving and modulating the backscatter of the carrier. A receiver/detector receives and detects the modulated backscattered phase-modulated signal, the detector being phase-sensitive and having as a reference signal the transmitted phase-modulating carrier signal, and having as an input signal the phase modulated backscattered carrier. The detector provides an output signal whose averaged amplitude is substantially dependent upon the degree of phase correlation between the phase of the modulation returned input signal and the reference signal. Finally, the output signal from the detector is selectively processed only when its averaged amplitude is above a threshold level. In a preferred embodiment the transmitted signal is a spread spectrum signal.

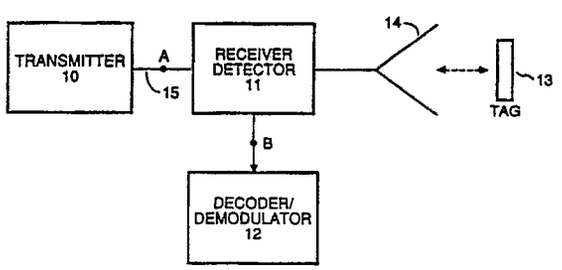


*FIGURE 1*

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# EUROPEAN SEARCH REPORT

Application Number

EP 89 30 4507

## DOCUMENTS CONSIDERED TO BE RELEVANT

| Category | Citation of document with indication, where appropriate, of relevant passages | Relevant to claim | CLASSIFICATION OF THE APPLICATION (Int. Cl.5) |
|---|---|---|---|
| A | NASA TECH. BRIEF. vol. NTN77, 1976, MARYLAND, US page 677 L.F. DEERKOSKI: "PN ranging/telemetry transmission" * the whole document * | 1,5 | G 01 S 13/82 |
| A | US-A-4 045 796 (A.J. KLINE) * column 1, lines 16 - 55 * * column 3, line 1 - column 5, line 29; figure 2 * | 1,5 | |
| A | US-A-4 370 653 (A.T. CROWLEY) * column 1, line 15 - column 2, line 38 * | 1,5 | |
| A | CA-A-1 225 451 (MINISTER OF NATIONAL DEFENCE,CANADA) * page 5, line 19 - page 7, line 11; figure 1a * | 1,5 | |

TECHNICAL FIELDS SEARCHED (Int. Cl.5)

G 01 S
G 07 C
G 06 K
G 08 G

The present search report has been drawn up for all claims

| Place of search | Date of completion of search | Examiner |
|---|---|---|
| The Hague | 11 March 91 | AUGARDE E.P.G.T. |

CATEGORY OF CITED DOCUMENTS

X: particularly relevant if taken alone
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E: earlier patent document, but published on, or after the filing date
D: document cited in the application
L: document cited for other reasons

&: member of the same patent family, corresponding document